

CLAIMS

We claim:

- 5 1. A method for modifying an optical path of an optical medium, the optical medium including a first layer adjacent a data layer comprising:
selecting a region of the first layer to be distorted; and
distorting the region of the first layer such that a reading operation of data stored in the first layer corresponding to the distorted region is modified.
- 10 2. The method of claim 1 wherein the first layer comprises a reading layer through which the optical path is directed.
3. The method of claim 1 wherein the optical medium further comprises a back layer adjacent the data layer, opposite the reading layer.
- 5 4. The method of claim 3 wherein selecting a region and distorting the region are further performed on the back layer.
- 20 5. The method of claim 1 wherein the first layer comprises a back layer.
6. The method of claim 5 wherein the optical medium further comprises a reading layer adjacent the data layer, the reading layer opposite the back layer.
- 25 7. The method of claim 6 wherein selecting a region and distorting the region are further performed on the reading layer.
8. The method of claim 1 wherein selecting comprises selecting a predetermined region of the first layer.

9. The method of claim 1 wherein selecting comprises selecting a random region of the first layer.
10. The method of claim 1 wherein distorting comprises distorting the region of the first layer
5 such that the optical path of incident light in the distorted region for reading the corresponding data in the data layer is modified.
11. The method of claim 1 wherein distorting comprises forming an indentation in an outer surface of the first layer.
- 10 12. The method of claim 11 further comprising encapsulating the indentation.
13. The method of claim 12 wherein encapsulating comprises providing a second layer on the first layer and the indentation.
14. The method of claim 11 wherein forming an indentation comprises forming multiple indentations of multiple depths in the first layer.
15. The method of claim 1 wherein distorting comprises providing a convex feature at the first layer.
16. The method of claim 15 wherein the convex feature extends from an outer surface of the first layer.
- 25 17. The method of claim 15 wherein the convex feature is embedded within the first layer.
18. The method of claim 15 further comprising encapsulating the convex feature with a second layer provided on the first layer and the convex feature.

19. The method of claim 15 wherein distorting further comprises forming an indentation in an outer surface of the first layer, and wherein the convex feature is provided within the indentation.

20. The method of claim 15 wherein distorting further comprises forming an indentation in an outer surface of the first layer, and wherein the convex feature is embedded within the first layer below the indentation.

21. The method of claim 15 wherein providing a convex feature comprises forming multiple convex features of multiple thicknesses at the first layer.

22. The method of claim 15 wherein the convex features comprise voids formed in the first layer.

23. The method of claim 1 wherein distorting comprises altering an outer surface of the first layer in the region.

24. The method of claim 23 wherein altering comprises altering the texture of the outer surface.

25. The method of claim 1 wherein distorting the region of the first layer is conducted during manufacture of the optical medium.

26. The method of claim 1 wherein distorting the region of the first layer is conducted following manufacture of the optical medium.

27. The method of claim 1 wherein distorting is conducted by a distorting technique selected from the group of techniques consisting of: pressure, heat, chemical, electrical, friction, and drilling.

28. The method of claim 1 wherein the optical medium is a dual-sided medium having dual opposed data layers and first layers.

29. An optical medium having a modified optical path comprising:

a first layer adjacent a data layer; and

a distorted region formed at the first layer such that a reading operation of data stored in the first layer corresponding to the distorted region is modified.

30. The optical medium of claim 29 wherein the first layer comprises a reading layer through which the optical path is directed.

31. The optical medium of claim 29 wherein the optical medium further comprises a back layer adjacent the data layer, opposite the reading layer.

32. The optical medium of claim 31 wherein a distorted region is further provided on the back layer.

33. The optical medium of claim 29 wherein the first layer comprises a back layer.

34. The optical medium of claim 33 further comprising a reading layer adjacent the data layer, the reading layer opposite the back layer.

35. The optical medium of claim 34 wherein a distorted region is further provided on the reading layer.

36. The optical medium of claim 29 wherein the distorted region is provided at a predetermined location.

37. The optical medium of claim 29 wherein the distorted region is provided at a location that is randomly generated.

38. The optical medium of claim 29 wherein the distorted region distorts the first layer such that the optical path of incident light in the distorted region for reading the corresponding data in the data layer is modified.

39. The optical medium of claim 29 wherein the distorted region comprises an indentation in an outer surface of the first layer.

40. The optical medium of claim 39 further comprising a second encapsulation layer on the first layer and the indentation.

41. The optical medium of claim 39 wherein the indentation comprises multiple indentations of multiple depths in the first layer.

42. The optical medium of claim 29 wherein the distorted region comprises a convex feature at the first layer.

43. The optical medium of claim 42 wherein the convex feature extends from an outer surface of the first layer.

44. The optical medium of claim 42 wherein the convex feature is embedded within the first layer.

45. The optical medium of claim 42 wherein the convex feature is encapsulated by a second layer provided on the first layer and the convex feature.

46. The optical medium of claim 42 wherein the distorted region further comprises an indentation formed in an outer surface of the first layer, and wherein the convex feature is provided within the indentation.

47. The optical medium of claim 42 wherein the distorted region comprises an indentation formed in an outer surface of the first layer, and wherein the convex feature is embedded within the first layer below the indentation.

5 48. The optical medium of claim 42 wherein the convex feature comprises multiple convex features of multiple thicknesses at the first layer.

49. The optical medium of claim 42 wherein the convex features comprise voids formed in the first layer.

10 50. The optical medium of claim 29 wherein the distorted region comprises an alteration of an outer surface of the first layer in the region.

51. The optical medium of claim 50 wherein the alteration comprises an alteration in the texture of the outer surface.

52. The optical medium of claim 29 wherein the distorted region is formed during manufacture of the optical medium.

53. The optical medium of claim 29 wherein the distorted region is formed following manufacture of the optical medium.

54. The optical medium of claim 29 wherein the distorted region is formed by a distorting technique selected from the group of techniques consisting of: pressure, heat, chemical, electrical, friction, and drilling.

55. The optical medium of claim 29 wherein the optical medium is a dual-sided medium having dual opposed data layers and first layers.